Claims

1.   A method for regulating access to data in at least
one data storage device (13; 43) in a system (9)
5   comprising a plurality of individual systems (10-12),
in which the individual systems (10-12) reserve
themselves free data areas or address areas in the data
storage device (13; 43) and the reserved areas are then
blocked for access by other individual systems (10-12),
10   with areas (20, 23; 48) which are speculatively
extended by expansion areas (19, 19') in comparison
with the directly required areas (18, 21; 49) being
reserved.

15   2.   The method as claimed in claim 1, characterized in
that the individual systems identify a directly
required area from at least one address statement (51).

3.   The method as claimed in claim 1 or 2,
20   characterized in that at least part of the data storage
device (13; 43) is provided as a communication device
for the individual systems (10-12).

4.   The method as claimed in one of the preceding
25   claims, characterized in that at least two individual
systems (10, 11) use a common area (22) of the data
storage device (13; 43).

5.   The method as claimed in one of the preceding
30   claims, characterized in that the system comprising a
plurality of individual systems (10-12) is a
distributed system.

6.   The method as claimed in one of the preceding
35   claims, characterized in that at least part of a
respective reserved expansion area (19, 19') going
beyond the directly required area (18) is released upon
a reservation request (50) relating to at least part of
the reserved expansion area (19, 19') from another

individual system (10-12) or from a data storage device (13; 43).

7.   The method as claimed in one of the preceding claims, characterized in that the expansion area (19, 19') is released upon a reservation request (50) coming from another individual system (10-12) if said expansion area is requested as a directly required area (21) by this other individual system.

8.   The method as claimed in claim 7, characterized in that the expansion area (19, 19') is also released upon a reservation request (50) coming from another individual system (10-12) if said expansion area is requested as an expansion area (22) by this other individual system.

9.   The method as claimed in claim 7, characterized in that only a particular part of the expansion area is released upon a reservation request (50) coming from another individual system (10-12) if said expansion area likewise relates only to the expansion area (22) in the case of this other individual system.

10.   The method as claimed in one of the preceding claims, characterized in that the individual systems (10-12) are databases and/or operating systems and/or individual modules.

11.   The method as claimed in one of the preceding claims, characterized in that the individual systems (10-12) and the at least one data storage device (13; 43) are decoupled from one another by means of buffer cache units (14-17).

12.   The method as claimed in one of the preceding claims, characterized in that the release of the directly required area (18) upon a reservation request (50) coming from another individual system (10-12) is

dependent on the urgency of the respective reservation.

13.   The method as claimed in one of the preceding claims, characterized in that reservations relate to
5   the read and/or write access.

14.   A data storage device for regulating access to data in a system (40, 9) comprising a plurality of individual systems (10-12), particularly individual
10   modules, having reservation means (46) for reserving free data areas or address areas (48, 49) in the data storage device (13; 43) using reservation requests (50) from the individual systems (10-12), where the reservation means (46) block the reserved areas for
15   access by other individual systems (10-12), and where the reservation means (46) are designed to reserve areas (20, 23; 48) which are speculatively extended in comparison with the directly required areas (18, 21).

20   15.   The data storage device as claimed in claim 14, characterized in that the reservation means (46) are designed to ascertain an area which is directly required by an individual system by evaluating at least one address statement (51) which is contained in a
25   reservation request (50) requesting the area.

16.   The data storage device as claimed in claim 14 or 15, characterized in that upon a competing reservation request (50) from a second individual system (11) the
30   reservation means (46) reserve at least part of a speculatively extended area (20, 23; 48) which is reserved for a first individual system (10) for the second individual system.

35   17.   An individual system, particularly an individual module, for cooperation with a data storage device (13; 43) as claimed in one of claims 14 to 16 for regulating access to data in a system comprising a plurality of individual systems (10-12), having requesting means

(44) for reserving free data areas or address areas in the data storage device (13; 43) using reservation requests (50), where the data storage device (13; 43) blocks the reserved areas for access by other

5   individual systems (10-12), and where the requesting means (44) are designed to reserve areas (20, 23; 48) which are speculatively extended in comparison with the directly required areas (18, 21; 49).

10   18.   The individual system, particularly an individual module, as claimed in claim 17, characterized in that the requesting means (44) are designed to send at least one address statement (51) for identifying at least one directly required area in a reservation request (50)

15   requesting   the   area   in   the   data   storage   device (13; 43).

19.   The individual system, particularly an individual module, as claimed in claim 17 or 18, characterized in

20   that it has communication means for communicating with at least one further individual system about a common area (18, 21; 49) which is at least intermittently reserved in the data storage device (13; 43), where the individual systems respectively identify the common

25   memory area from at least one address statement (51).

20.   The data storage device as claimed in one of claims 14 to 16 or the individual system, particularly an individual module, as claimed in one of claims 17 to

30   19, characterized in that it contains program code which can be executed by a processor (30) in a computer (40).

21.   A message for communication between a data storage

35   device as claimed in one of claims 14 to 16 and an individual system, particularly an individual module, as claimed in one of claims 17 to 19, characterized in that it contains a reservation request (50) or a reservation confirmation for at least one speculatively

extended area (20, 23; 48).

22.   A storage medium having a data storage device (13;
43) and/or an individual system, particularly an
individual module, as claimed in claim 20 and/or a
message as claimed in claim 21.